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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,830	08/21/2002	Lih-Ren Shiue	JCLA9625	9790

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J C PATENTS, INC.
4 VENTURE, SUITE 250
IRVINE, CA 92618

EXAMINER	
CANTELMO, GREGG	
ART UNIT	**PAPER NUMBER**
1745	

DATE MAILED: 08/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/064,830	SHIUE ET AL.	
	Examiner	Art Unit	
	Gregg Cantelmo	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the compliant amendment received May 23, 2005:

   a. Claims 1-13 are pending;

   b. The 112 rejections are withdrawn in light of the amendment to the claims;

   c. The prior art rejection of record stands.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Thomas et al., of record.

Thomas et al. disclose a energy storage system which includes a first power source, which may be a battery, particularly a zinc-air battery or a lithium polymer battery. (See column 2, lines 23-27.) The system further includes a second power source within the same housing. The second power source may be a capacitor. (See Fig. 3 and column 4 lines 37-65.) Electronic circuitry connected to the two power sources is adapted to condition the output of the two power sources. (See column 3, lines 12-22.) The circuitry is considered to control complementary charge and complementary discharge between the battery element and the capacitor element. With

regards to claim 6, both the capacitor and the battery disclosed by Thomas et al. may be the same, for example, alkaline. (See column 2, lines 36 and 52.)

Response to Arguments

4. Applicant's arguments filed May 23, 2005 have been fully considered but they are not persuasive.

Applicant argues that from Fig. 2, Thomas fails to teach, suggest or disclose "two terminals on the exterior of said housing for charging and discharging."

The examiner respectfully disagrees.

In order for the power source to be connected to the electronic device, the power source (and the battery and capacitor therein) must have terminals to discharge the stored power from the power source to the electronic device. Furthermore the structure in Fig. 1 shows To argue that the device does not have terminals is counterintuitive to the operative requirements of the power source and this argument is found to be unconvincing. If applicant asserts this position they are invited to explain how the battery is electrically connected to the electronic device in which it is provided.

Contact element 88 is disposed on the exterior of the housing and , includes positive and negative terminals (as evidenced by U.S. Patent No. 5,421,745 Aksoy, Figs. 1-4 which discloses the same general battery configuration and contact element as shown in Thomas).

Therefore, contrary to Applicant's position, Thomas, in fact, has terminals disposed on the exterior of the housing.

Applicant then argues that Thomas does not teach, suggest or disclose "an electronic controller to control the complementary charge and complementary discharge between said battery element and said capacitor element."

Again the Examiner respectfully disagrees.

Thomas does in fact employ a controller, as discussed in Examiner Chaney's rejection in the previous office action. The controller, can regulate any number of conditions or states of the power source.

Furthermore the claims fail to impart sufficient structure to the controller or controller circuit which would differentiate the structure of the controller of the claims from that of Thomas. Therefore, the control step of the claims is held to be a mode of operation of the controller or intended use of the controller and not held to provide significant structure to the claims to differentiate it from that of Thomas.

While intended use recitations and other types of functional language cannot be entirely disregarded. However, in apparatus, article, and composition claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. In re Casey, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); In re Otto, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963).

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). See also MPEP § 2114.

The manner of operating the device does not differentiate an apparatus claim from the prior art. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Thus the claims are anticipated.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al. in view of Lian et al., US Patent 5,563,765, or record.

As discussed above Thomas et al. disclose applicants' invention essentially as claimed, with the exception that Thomas et al. do not disclose specific energy densities or electrolytes for the capacitors used. Lian et al. disclose capacitors having a charge 2 See column 5, lines 37-45.) The capacitors were tested using a density of 0.2 F/cm .

31% KOH electrolyte. (See column 4, lines 4-9.) Because of the relatively high charge density of the capacitors disclosed by Lian et al., one of ordinary skill in the art would consider these to be "super capacitors". It would have been obvious to one of ordinary skill in the art to use the capacitors suggested by Lian et al. in the energy storage system disclosed by Thomas et al. because Thomas et al. suggest the Lian capacitors as potentially useful in their invention. (See Thomas et al., column 3, lines 6-11.)

Response to Arguments

7. Applicant's arguments filed May 23, 2005 have been fully considered but they are not persuasive.

Applicant argues that the claimed energy density of the capacitor, 0.15 F/cm2, is distinct from 0.2 F/cm2 of Lian.

The Examiner respectfully disagrees.

The scope of Applicant's argument is not commensurate with the scope of claim 4. It is readily apparent that claim 4 recites that the energy density can be greater than 0.15 F/cm2. Thus 0.2 F/cm2, as taught by Lian is held to teach of the range of claim 4.

Applicant further argues that Lian fails to teach, suggest or disclose an electric double layer capacitor.

Again the scope of Applicant's argument is not commensurate with the scope of claim 5. It is readily apparent that claim 5 recites that the capacitor of claim 5 can be any of the species defined in the genus of claim 5. And as discussed previously by Examiner Chaney, the capacitors of Lian are exemplary of super capacitors.

Applicant also argues that claims 4-6 are patentable for the reasons argued with respect to claim 1. However since the rejection of claim 1 has been maintained, these arguments are not persuasive as set forth in item 4 above.

Thus the rejection stands.

Claim Rejections - 35 USC § 103

8. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al. in view of Narang et al., US Patent 5,548,055, of record.

As discussed above, Thomas et al. discloses applicants' invention essentially as claimed with the exception that Thomas et al. do not disclose capacitors with polymer electrolyte or organic solvent in the electrolyte. Narang et al. disclose electrolytes useable with super capacitors. (Column 10, lines 28-33.) The electrolytes contain siloxane and polyvinylidene fluoride polymers and plasticizer. (See Fig. 1.) The plasticizer may be lower alkyl carbonates, which would include diethyl and dimethyl carbonates. (See column 20, lines 50-53.) The electrolytes are taught as providing high ambient temperature ionic conductivity and excellent physical and mechanical att/butes. (Column 5, lines 1-7.) Therefore, it would have been obvious to one of ordinary skill in the art to use the electrolyte disclosed by Narang et al. in both the capacitor and battery of the Thomas et al. invention in order to achieve high ionic conductivity and good mechanical properties.

Response to Arguments

9. Applicant's arguments filed May 23, 2005 have been fully considered but they are not persuasive.

Applicant argues that Lian discloses polymer electrolytes instead of the claimed organic electrolytes..

The Examiner respectfully disagrees.

Lian is not discussed in the rejection of claims 7 and 8 and therefore arguments to the disclosure of Lian are not germane to this rejection.

Applicant argues that Narang does not disclose diethyl and dimethyl carbonates.

The examiner respectfully disagrees.

The scope of Applicant's argument is not commensurate with the scope of claim 7. It is readily apparent that claim 7 recites a larger genus of organic solvents which include specific diethyl carbonates and dimethyl carbonates. However the genus also includes other materials such as propylene carbonate and ethylene carbonate.

A review of Narang shows that each of these is clearly disclosed (see col. 5, ll. 8-44). Further the Examiner concurs with Examiner Chaney that the disclosure identified in column 20, i.e. "lower alkyl carbonates" would provide reasonable teachings to one of ordinary skill in the art to arrive at diethyl carbonates and dimethyl carbonates, especially considering the explicit disclosure of Narang in column 5.

Applicant also argues that claims 7-8 are patentable for the reasons argued with respect to claim 1. However since the rejection of claim 1 has been maintained, these arguments are not persuasive as set forth in item 4 above.

Thus the rejection stands.

Claim Rejections - 35 USC § 103

10. Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Thomas et al, of record.

Thomas et al. disclose applicants' invention essentially as claimed, with the exception that Thomas et al. do not specifically disclose the specifics of charge and discharge control recited in applicant's claims. However, Thomas et al. disclose a variety of power output conditioning circuitry are possible in their system. (See column 3, lines 1 1-22.) Thus, one of ordinary skill in the art would appreciate the power conditioning circuitry disclosed by Thomas et al. would include the systems as claimed by applicants in instant claims 9-13.

Response to Arguments

11. Applicant's arguments filed May 23, 2005 have been fully considered but they are not persuasive.

Applicant then argues that Thomas does not teach, suggest or disclose "an electronic controller to control the complementary charge and complementary discharge between said battery element and said capacitor element."

Again the Examiner respectfully disagrees.

Thomas does in fact employ a controller, as discussed in Examiner Chaney's rejection in the previous office action. The controller, can regulate any number of conditions or states of the power source.

Furthermore the claims fail to impart sufficient structure to the controller or controller circuit which would differentiate the structure of the controller of the claims from that of Thomas. Therefore, the control step of the claims is held to be a mode of

operation of the controller or intended use of the controller and not held to provide significant structure to the claims to differentiate it from that of Thomas.

While intended use recitations and other types of functional language cannot be entirely disregarded. However, in apparatus, article, and composition claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. In re Casey, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); In re Otto, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963).

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). See also MPEP § 2114.

The manner of operating the device does not differentiate an apparatus claim from the prior art. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is (571) 272-1283. The examiner can normally be reached on Monday to Thursday from 9 a.m. to 6 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. FAXES received after 4 p.m. will not be processed until the following business day. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregg Cantelmo
Primary Examiner
Art Unit 1745

gc

July 30, 2005